WHAT IS CLAIMED IS:

1. A melt-blown tubular core element for filter cartridges comprised of a tubular mass of non-woven, continuous length, thermoplastic cords forming an open, non-filtering matrix, wherein said cords include multiple melt-blown continuous length thermoplastic fibers coalesced substantially side-by-side to one another along at least lengthwise portions of their respective peripheral surfaces.

2. The core element of claim 1, wherein the cords have a nominal cross-sectional diameter of between about 100 to about 1500 μm.

3. The core element of claim 2, wherein the cords have a nominal cross-sectional diameter of between about 200 to about 900 μm.

4. The core element of claim 1, wherein the matrix of non-woven cords has a mean porosity of greater than about 30%.

5. The core element of claim 4, wherein the matrix of non-woven cords has a mean porosity of greater than about 50%.

6. The core element of claim 1, wherein the matrix of non-woven cords has a mean porosity of between about 30% to about 80%.

7. The core element of claim 6, wherein the matrix of non-woven cords has a mean porosity of between about 50% to about 60%.

8. The core element of claim 1, wherein the non-woven cords are thermally bonded to one another at respective crossing locations.

9. The core element of claim 1, wherein the thermoplastic fibers are formed of a thermoplastic polymer selected from the group consisting of polyolefins, polyamides, polyesters, acetals, fluoropolymers, polyphenylene sulfides, biodegradable polymers, liquid crystal polymers, polyetherether ketones, polystyrenes, polymers of vinylidene monomers and mixtures thereof.

10. A filter cartridge which comprises a core element as in any one of the preceding claims 1-9, and at least one annular filtration zone which includes a filtration medium surrounding said core element.

11. The filter cartridge of claim 10, wherein said filtration medium includes a mass of non-woven, continuous length thermoplastic filtration fibers.

12. A method of making a melt-blown tubular core element comprising melt-blowing continuous length thermoplastic fibers toward an axially rotating mandrel such that multiple adjacent ones of said fibers coalesce substantially side-by-side to one another along at least lengthwise portions of their respective peripheral surfaces to form a multiplicity of continuous length, thermoplastic cords, and depositing said cords onto the mandrel to form a tubular non-woven mass thereof which defines an open, non-filtering matrix.

13. The method of claim 12, wherein said mandrel includes surface perforations, and wherein the method further comprises the step of directing a pressurized fluid outwardly through the surface perforations.

14. The method of claim 12, further comprising bringing said cords deposited onto the mandrel into contact with a roller.

15. The method of claim 14, wherein said step of melt-blowing continuous length thermoplastic fibers includes issuing streams of molten thermoplastic material through orifices of a die to form the continuous length thermoplastic fibers, and positioning the die in upstream misregistration with respect to the roller.

16. The method of claim 12, wherein said forming step is practiced such that the cords have a nominal cross-sectional diameter of between about 100 to about 1500 μm.

17. The method of claim 16, wherein said forming step is practiced such that the cords have a nominal cross-sectional diameter of between about 200 to about 900 μm.

18. The method of claim 12, wherein said forming step is practiced such that the matrix of non-woven cords has a mean porosity of greater than about 30%.

19. The method of claim 18, wherein said forming step is practiced such that the matrix of non-woven cords has a mean porosity of greater than about 50%.

20. The method of claim 12, wherein said forming step is practiced such that the matrix of non-woven cords has a mean porosity of between about 30% to about 80%.

21. The method of claim 20, wherein said forming step is practiced such that the matrix of non-woven cords has a mean porosity of between about 50% to about 60%.

22. The method of claim 12, wherein said forming step is practiced such that the non-woven cords are thermally bonded to one another at respective crossing locations.

23. The method of claim 12, wherein said forming step further comprises extruding a molten thermoplastic polymer selected from the group consisting of polyolefins, polyamides, polyesters, acetals, fluoropolymers, polyphenylene sulfides, biodegradable polymers, liquid crystal polymers, polyetherether ketones, polystyrenes, polymers of vinylidene monomers and mixtures thereof.

24. A method for the continuous production of filter cartridges comprising:

(a) forming an axially elongate filter cartridge preform comprised of an annular mass of non-woven, melt-blown, continuous length filtration fibers by continuously rotating and axially translating the core element relative to a melt-blowing die assembly;

(b) cooling the preform by continuously axially translating the preform through a cooling sub-system wherein cooling air is brought into contact therewith; and then

(c) severing a filter cartridge of predetermined length from a downstream section of the cooled preform.

25. The method of claim 24, wherein prior to step (a), there is practiced the step of (1) forming a core element onto which the filter fibers are to be deposited by melt-blowing continuous length thermoplastic core fibers toward an axially rotating mandrel such multiple adjacent ones of said core fibers coalesce substantially side-by-side to one another along at least lengthwise portions of their respective peripheral surfaces to form a multiplicity of continuous length, thermoplastic cords, and (2) depositing said cords onto the mandrel to form the core element comprised of a tubular non-woven mass of said cords.

26. The method of claim 24, wherein step (c) comprises the steps of simultaneously moving a cutting device parallel and perpendicular relative to the preform concurrently with the rotation and axial translation of the preform so that the cutting device severs the preform at a selected location to thereby obtain a filter cartridge of predetermined length.

27. The method of claim 24 or 26, further comprising the step of (d) transferring the filter cartridge to a downstream finishing station.

28. The method of claim 27, wherein step (d) includes the step of coaxially positioning the filter cartridge between a pair of ultrasonic horns.

29. The method of claim 28, wherein step (d) includes the step of bringing the ultrasonic horns into contact with respective ends of the filter cartridge and operating the ultrasonic horns to finish the respective ends.

30. The method of claim 29, which further comprises the step of releasing the end-finished filter cartridge from the ultrasonic horns and transferring the end-finished filter cartridge to a downstream location.

31. A method for the continuous production of filter cartridges comprising the steps of:

(a) forming an axially elongate filter cartridge preform comprised of an annular mass of non-woven, melt-blown, continuous length filtration fibers; and

(b) severing a filter cartridge of predetermined length from a downstream section of the preform by simultaneously moving a cutting device parallel and perpendicular relative to the preform concurrently with the rotation and axial translation of the preform so that the cutting device severs the preform at a selected location to thereby obtain a filter cartridge of predetermined length.

32. The method of claim 31, wherein prior to step (b) there is practiced the step of (c) cooling the preform.

33. The method of claim 31, wherein step (c) includes the step of determining the axial translation rate of the preform, and thereafter controllably moving the cutting device parallel to the axial translation of the preform at substantially the same axial translation rate.

34. The method of claim 33, wherein said step of determining the axial translation rate of the preform includes causing a terminal end of the preform to contact a coaxially positioned sensor head, allowing the sensor

head to be displaced axially concurrently with the axially translating preform, and measuring rate of displacement of the sensor head which is indicative of the axial translation rate of the preform.

35. The method of claim 31, wherein prior to step (b), there is practiced the step of (c) stabilizing the preform against lateral movement.

36. The method of claim 35, wherein step (c) is practiced by the step of moving a stabilizer into contact with the preform upstream of the cutting device.

37. The method of claim 31, which further comprises the step of (c) transferring the filter cartridge to a downstream finishing station.

38. The method of claim 37, wherein step (c) includes the step of coaxially positioning the filter cartridge between a pair of ultrasonic horns.

39. The method of claim 38, wherein step (c) includes the step of bringing the ultrasonic horns into contact with respective ends of the filter cartridge and operating the ultrasonic horns to finish the respective ends.

40. The method of claim 39, which further comprises the step of releasing the end-finished filter cartridge from the ultrasonic horns and transferring the end-finished filter cartridge to a downstream location.

41. A method for the continuous production of filter cartridges comprising the steps of:

(a) forming an axially elongate filter cartridge preform comprised of an annular mass of non-woven, melt-blown, continuous length filtration fibers;

(b) severing a filter cartridge of predetermined length from a downstream section of the preform; and

(c) coaxially positioning the filter cartridge between a pair of ultrasonic horns and operating the ultrasonic horns so as to finish opposed terminal ends of the filter cartridge.

42. The method of claim 41, wherein prior to step (b), there is practiced the step of cooling the preform.

43. The method of claim 41, wherein said preform is translated at a predetermined axial rate in a downstream direction, and wherein step (b) includes moving a cutting device parallel to the preform at substantially the same axial translation rate simultaneously while severing the preform to obtain the filter cartridge.

44. The method of claim 41, wherein step (c) includes the step of gripping the filter cartridge with transfer arm, and thereafter swinging the transfer arm and the filter cartridge gripped so as to transfer the filter cartridge into coaxial alignment between the ultrasonic horns.

45. Apparatus for the continuous production of filter cartridges comprising:

a melt-blowing system for melt-blowing continuous length thermoplastic filtration fibers and collecting a non-

woven mass thereof to form an axially elongate filter cartridge preform;

a drive assembly for rotating the preform about its longitudinal axis in a predetermined direction and for axially translating the preform in a downstream direction at a predetermined axial translation rate;

a cutting system positioned downstream of the melt-blowing system for severing a downstream section of the preform and obtaining a filter cartridge therefrom, wherein

said cutting system includes a cutting device, and a carriage assembly for the cutting device to allow for movements of the cutting device parallel to the longitudinal axis of the preform simultaneously while the cutting device is moved toward and away from the preform perpendicularly relative to the longitudinal axis thereof.

46. Apparatus of claim 45, further comprising a cooling system positioned between said melt-blowing and cutting systems for directing cooling air against the rotating and axially translating preform.

47. Apparatus of claim 45, further comprising a transfer system positioned downstream of said cutting system for transferring the filter cartridge which is severed from the preformed to another location.

48. Apparatus of claim 45, wherein said transfer system includes a transfer arm laterally positioned relative to the filter cartridge, and having a distal end which includes gripping fingers moveable between open and closed conditions, said transfer arm being pivotally mounted at a proximal

end thereof for movements between a first position wherein the gripping fingers are capable of gripping the filter cartridge, and a second position wherein the gripping fingers and the filter cartridge gripped thereby is located at another location laterally of the preform.

49. Apparatus of claim 48, further comprising a pair of axially separated ultrasonic horns disposed at said another location, and wherein said transfer arm when in said second position coaxially aligns the filter cartridge gripped thereby with said pair of ultrasonic horns.

50. Apparatus of claim 45, wherein said cutting system includes a sensor system for determining an axial translation rate of the preform and for issuing a signal to move the carriage assembly, and thus the cutting device carried thereby, at substantially the same rate as the axial translation rate of the preform.

51. Apparatus of claim 50, wherein said sensor system includes a sensor head which is positioned in coaxial opposition to a terminal end of the preform, said sensor head being contacted by the preform terminal end and displaced in a downstream direction concurrently with the axial translation of the preform.

52. Apparatus of claim 45, wherein said cutting system includes a stabilizer assembly for stabilizing the preform against lateral movement.

53. Apparatus of claim 52, wherein said stabilizer assembly includes a pair of stabilizing fingers moveable between an open condition to accept the preform therewithin, and a closed condition wherein the stabilizing fingers establish a circumferential collar around the preform.

54. Apparatus of claim 45, wherein the melt-blowing system includes a core fiber melt-blowing sub-system, and a filtration fiber melt-blowing sub-system.

55. Apparatus of claim 54, wherein the core melt-blowing sub-system includes a mandrel having a near end mounted for rotational motion, a far end which terminates adjacent said drive assembly, and an intermediate section for receiving melt-blown core fibers thereon, wherein said far end is connected to said intermediate section for movements about two axes relative to the longitudinal axis of the mandrel.

56. Apparatus of claim 55, wherein said filter fiber melt-blowing sub-system includes multiple melt-blowing dies for melt-blowing respectively different types of filtration fibers.

57. Apparatus for producing filter cartridges formed of a non-woven mass of continuous length thermoplastic fibers comprising a melt-blowing die, an extruder for supplying molten thermoplastic polymer to the die so that streams of melt-blown fibers issue therefrom, and a mandrel for receiving the streams of melt-blown fibers issued from the die, wherein the mandrel has a terminal end which is journally mounted to an axially stationary upstream segment thereof, said terminal end being freely moveable relative to said upstream segment.

58. Apparatus of claim 57, wherein said mandrel includes surface perforations allow pressurized fluid to be expelled outwardly therefrom.

59. Apparatus of claim 57 or 58, further comprising a roller for contacting the melt-blown fibers received on the mandrel, and wherein said melt-blowing die is misregistered in an upstream direction relative to the roller.

60. A system for transferring elongate articles comprising:

a set of transfer arms each having gripping fingers which are moveable between an open condition for receiving the elongate article therein and a closed condition for gripping the elongate article;

each of said transfer arms being mounted for pivotal movements between a first position in which the elongate article may be received into the gripping fingers, and a second position which is spaced from the first position; wherein

at least first and second ones of said transfer arms are moveable reciprocally in an axial direction parallel to the elongate article by different linear extents relative to a third one of said transfer arms so that separation distances between said first, second and third transfer arms may be varied proportionally with respect to one another and thereby maintain the separation distances substantially constant therebetween.

61. The system of claim 60, wherein said first one of said transfer arm is stationary relative to the longitudinal axis of the elongate article.

62. The system of claim 60 or 61, wherein said second one of said transfer arms is mounted for movement in said axial direction by a linear extent which is proportionally less than a linear extent of movement of said third one of said transfer arms such that concurrent movement of said second and third ones of said transfer arms maintains said separation distances substantially the same between said first, second and third ones of said transfer arms.

63. The system of claim 62, wherein said first and second ones of said transfer arms are threadably connected to respective threaded control rods having a different number of threads per unit length.